

REVALIDATION OF THE TARANTULA GENUS
***Phlogiodes* POCK, 1899**
(ARANEAE: THERAPHOSIDAE: THRIGMOPOEINAE)

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ABSTRACT

The tarantula genus *Phlogiodes* Pocock 1899 is revalidated and re-diagnosed in light of the present knowledge gathered from type material and fresh collection of *Phlogiodes validus* Pocock, 1899 **new combination**, from type locality as well as other known localities. Based on description, *Haploclostus satyanus* Barman 1978 is treated as ***incertae sedis*** with regards to its generic allocation which renders Thrigmopoeinae endemic to Western Ghats.

Key words: Theraphosidae, taxonomy, *Phlogiodes*, *Haploclostus*, Western Ghats, *incertae sedis*

The theraphosid spider subfamily Thrigmopoeinae is represented by eight species in two genera *Haploclostus* Simon 1892: *H. cervinus* Simon, 1892, *H. kayi* Gravely, 1915, *H. nilgirinus* Pocock, 1899, *H. satyanus* Barman, 1978, *H. tenebrosus* Gravely, 1935 and *H. validus* Pocock, 1899; *Thrigmopoeus* Pocock 1899: *T. Nisignis* Pocock 1899 and *T. Trucilentus* Pocock 1899 ((Mirza, Sanap, & Siliwal, 2011; Pocock 1900; Siliwal & Molur, 2009; Siliwal & Raven, 2010). Barman (1978) described *Haploclostus satyanus* from the Himalayas and likely the species is wrongly placed in the genus *Haploclostus* and we here treat *Haploclostus satyanus* ***incertae sedis***. This makes the Thrigmopoeinae endemic to the Western Ghats as all other known species of this subfamily are distributed only in the Western Ghats.

Pocock (1899) described the genus *Phlogiodes* to embody *P. validus* and *P. robustus* both from Matheran, Raigad District, Maharashtra. Raven (1985) synonymised *Phlogiodes* with *Haploclostus*. Based on original description Siliwal & Raven (2010) synonymised *H. robustus* with *H. validus* which was further attested by Mirza *et al.* (2011), who supported with this action based on fresh material from the type locality. Mirza *et al.* (2011) highlighted that *H. validus* is a trapdoor tarantula, a unique adaptation uncommon to spiders of the family Theraphosidae.

In the course of an ongoing study on Indian mygalomorph spiders, we visited the Natural History Museum, London to examine specimens of mygalomorph spiders collected from India. Given our doubts on placement of *H. validus* in the genus *Haploclastus*, we examined the type specimens of *Phlogiodes robustus* as well as other members of the sub-family Thrigmopoeinae and conclude that the material is distinct from other *Haploclastus*. In the present communication, we revalidate and re-diagnose the genus *Phlogiodes*.

Specimens were examined from the collection of Natural History Museum, London; diagrams of type specimens from Zoological Survey of India and fresh material deposited in Wildlife Information Liaison Development Society, Coimbatore. Specimens were examined and imaged using a Leica and a Canon 550D.

Institution acronyms-

NHM – Natural History Museum, London

BMNH – British Museum of Natural History, London (=NHM)

WILD – Wildlife Liaison Development Society, Coimbatore (India)

ZSIK – Zoological Survey of India, Kolkata (India)

Systematics

Family: Theraphosidae

Sub-family: Thrigmopoeinae

***Phlogiodes* Pocock, 1899**

Type species: *Phlogiodes validus* Pocock 1899

Material examined: 2 females, Matheran, Raighad District BMNH (registration numbers not available); 1 female, 19.ii.2010, Matheran, Raighad District, Maharashtra (19000'N & 73017'E), 1 female, Jauli, Satara District BMNH (registration numbers not available); 800m elevation) coll. Ashish Jadhav & Rajesh Sanap WILD-10-ARA-1103; 1 female, 28.xii.2009, Aarey Milk Colony, Mumbai, Maharashtra, (1907'31''N & 72052'76''E; 104m elevation), coll. Rajesh Sanap & Zeeshan Mirza, WILD-10-ARA-544; 1 male, 27.iv.2010, Matheran, Raighad District, Maharashtra (19000'N & 73017'E; 800m elevation), coll. Rajesh Sanap and Zeeshan Mirza, WILD-10-ARA-1102; 1 male, 24.vi.2009, Aarey Milk Colony, Mumbai, Maharashtra (1907'31''N & 72052'76''E; 104m elevation), coll. Zeeshan Mirza & V. Rathode, WILD-10-ARA-543.

Diagnosis: Fovea deep, strongly procurved. Posterior sterna sigilla deep and remote from sternal margin. Retrolateral face of chelicerae lacking lyrate setae on its basal oral groove (Fig. 1a). Prolateral face of maxilla with 2–3 rows of stout thorns arranged along the maxillary suture line bellow and above it, bellow this row, long black thick setae scattered over the surface bellow the maxillary suture (Fig. 1b). Retrolateral

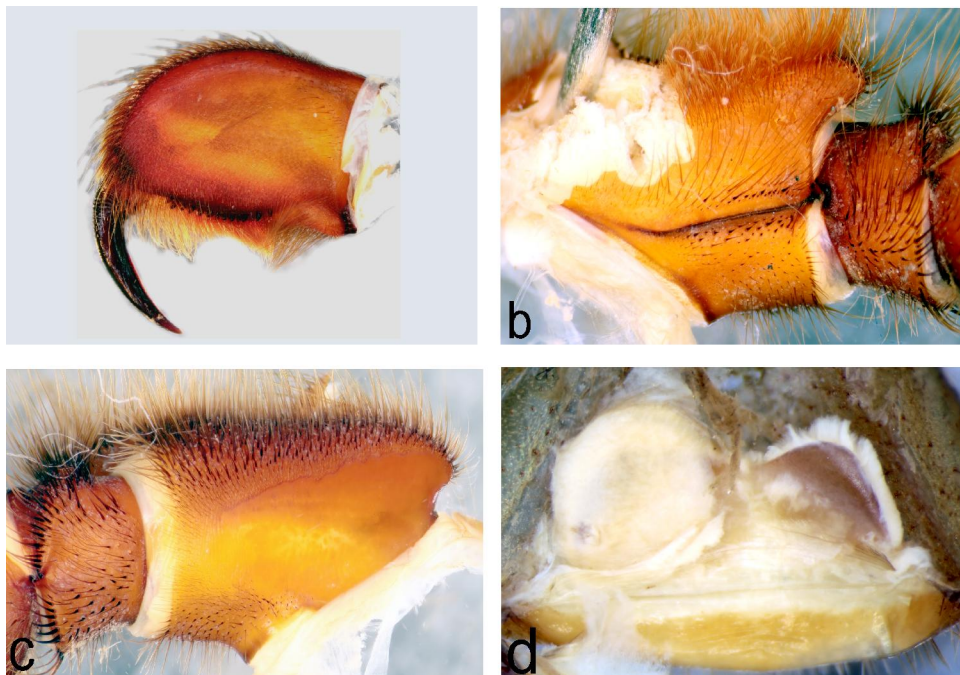


Figure 1. Holotype female *Phlogiodes validus*; a. Retrolateral face of chelicerae, b. prolateral face of maxilla, c. retrolateral aspect of coxa I showing thick spike setae on retrolateral dorsal edge, d. Spermathecae.

face of maxilla and coxa of legs with thick spike setae on their dorsal edge (Fig. 1c). Spermathecae fused, in the form of a brick with slight raised edges resembling mounds (Fig. 1d).

Description – Medium sized spiders 16–31. Carapace ovate, hirsute, with two clear (setae-less) bands on both sides of the caput. Caput high in females. Fovea procurved, not straight. Eye group sub-quadrate to wider than long, ocular tubercle well defined. Clypeus narrow. Chelicerae normal, with 16–25 teeth on promargin of furrow, basomesally 49–50 small teeth. Labium wider than long. Labiosternal groove with two distinct mounds. Cuspules 220–265 in the sub-apical region of the labium. Maxillae longer than wide, overall setose, prolateral anterior angle distinctly produced, 200 cuspules distributed along proximal prolateral angle. Serrula absent. Sternum as long as wide, sigilla small oval, submarginal, posterior sigilla centrally placed, deep. Prolateral face of maxilla in females with 2–3 rows of stout thorns arranged along the maxillary suture line bellow and above it, bellow this row, long black thick setae scattered over the surface bellow the maxillary suture. Maxillary stridulatory setae not evident in males. Retrolateral face of maxilla and coxa of legs with thick spike setae on their dorsal edge. Legs moderately stout, hirsute, spines present except on femora & coxa. Abdomen hirsute, without pattern. PMS well-developed; PLS, apical segment digitiform. Males lack tibial apophysis. Embolus of palp bulb stout

ends in a blunt tip resembling a duck's bill with several keels. Spermathecae fused, in the form of a brick with slight raised edges resembling mounds.

Affinities: The genus *Phlogiodes* differs from *Thrigmopoeus* in lacking lyriform seata on the retrolateral basal oral groove (present in *Thrigmopoeus*) and in bearing 2–3 rows of stout thorns arranged along the maxillary suture line below and above it; below this row are long black thick setae scattered over the surface below the maxillary suture (well defined band of thorn setae on the prolateral face of the maxillae in *Thrigmopoeus*, *scattered setae all over the maxillary prolateral face not in a defined manner in Haploclastus*) and spermathecae fused in the form of a brick like structure with the upper ends raised and rounded (*spermathecae not fused, in the form of mounds in Thrigmopoeus and Haploclastus*). In addition to the above discussed characters, *Phlogiodes validus* makes a complex trapdoor burrow whereas *Thrigmopoeus* and *Haploclastus* make simple burrows without a trapdoor entrance to the burrow. *Phlogiodes validus* possesses thick spike setae on dorsal edge of retrolateral face of maxilla and coxa of legs which is a unique character within this subfamily not found in other two genera.

Remark: For detailed description of *Phlogiodes validus* see Mirza et al. (2011). Theraphosid taxonomy in India is poorly understood and most comprehensive compilation was by Raven (1985). Raven's (1985) compilation still serves as the best source for generic identification of mygalomorphae in India. However, there are a few erroneous implications in the compilation which can be resolved only after examining type material and fresh collection. Revalidation of the genus *Phlogiodes* merely highlights the argument presented in the preceding sentences. The present action was essential to further understand biogeography and evolution of tarantulas of Western Ghats and resolve taxonomy of mygalomorph spiders of India as a whole.

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List of material examined:

Haploclastus kayi Gravely, 1915 Diagrams of female holotype from ZSI
Haploclastus nilgirinus Pocock, 1899 BMNH 94.8.21.9, female holotype

Haploclastus sp. BMNH 99.7.10.23

Haploclastus tenebrosus Gravely, 1935 Diagrams of male holotype from ZSI
Phlogiodes validus Pocock, 1899 female holotype BMNH, registration number not available

Thrigmopoeus insignis Pocock, 1899 BMNH 1899.7.10.13, female holotype

Thrigmopoeus truculentus Pocock, 1899 BMNH 98.12.92, female holotype